What is claimed is :

1. An apparatus for emulating audio effects, receiving an audio source signal so as to simulate and output audio effects of the audio source signal under different environments, comprising:

   an echo device, receiving the audio source signal and applying thereof so as to generate an echo signal and a feedback signal;

   a reverberation device, receiving the audio source signal so as to output a reverberation signal according to the feedback signal;

   an audio source device, receiving the audio source signal and applying thereof so as to output a direct audio source signal; and

   a first signal synthesizer, receiving and synthesizing the echo signal, the reverberation signal and the direct audio source signal so as to output a first synthesized signal, which is an audio effect emulation signal.

2. The apparatus for emulating audio effects of claim 1, wherein the echo device further comprises:

   a first delay unit, receiving the audio source signal and applying thereof so as to output a first delay signal;

   a first gain unit, receiving the first delay signal and applying thereof so as to output a first gain signal;

   a second delay unit, receiving the audio source signal and applying thereof so as to output a second delay signal;

   a second gain unit, receiving the second delay signal and applying thereof so as to output a second gain signal;

   a second signal synthesizer, receiving and synthesizing the first gain signal, and the second gain signal so as to output a second synthesized signal, which is the feedback signal; and

   a third gain synthesizer, receiving the second synthesized signal and applying thereof so as to output a third gain signal, which is the

echo signal.

3. The apparatus for emulating audio effects of claim 2, wherein the reverberation device further comprises:

a third signal synthesizer, receiving the audio source signal and the feedback signal so as to output a third synthesized signal;

a third delay unit, receiving the third synthesized signal and applying thereof so as to output a third delay signal;

a fourth gain unit, receiving the second delay signal and applying thereof so as to output a second gain signal, moreover, the third signal synthesizer is used to receive and synthesize the audio source signal, the feedback signal and the fourth gain signal so as to output the third synthesized signal; and

a fifth gain unit, receiving the fifth gain signal and applying thereof so as to output a fifth gain signal, which is the reverberation signal.

4. The apparatus for emulating audio effects of claim 3, wherein the audio source device is a sixth gain unit capable of receiving the audio source signal and applying thereof so as to output a sixth gain signal, which is the direct audio source signal.

5. The apparatus for emulating audio effects of claim 4, wherein the first delay unit, the second delay unit and the third unit are registers.

6. The apparatus for emulating audio effects of claim 5,wherein the register is a memory of 44K bytes size.

7. The apparatus for emulating audio effects of claim 6,wherein the first, the second, the third, the fourth, the fifth, and the sixth gain unit are all reverse gain units.

8. The apparatus for emulating audio effects of claim 7,wherein the first, the second and the third signal synthesizer are all adders.

9. A method for emulating audio effects, comprising steps of:

delaying and decaying an audio source signal for simulating an

echo signal of the audio source signal in a certain environment;

mixing the audio source signal and the delayed/decayed audio source signals for simulating a reverberation signal of the audio source signal in the certain environment;

synthesizing the audio source signal, the echo signal and the reverberation signal and using the resulting synthesized signal as the audio effect of the audio source signal in the certain environment.

10. The method for emulating audio effects of claim 9, further comprising: respectively decaying the audio source signal, the echo signal, and the reverberation signal that are to be synthesized.

11. The method for emulating audio effects of claim 10, further comprising: varying along the time the magnitude of the audio source signal, the echo signal, and the reverberation signal that are to be synthesized.

12. The method for emulating audio effects of claim 11, wherein a Z transformation method is used for decaying the audio source signal.

13. The method for emulating audio effects of claim 12, wherein the root-mean-square value of the echo signal is larger than twofold the root-mean-square value of the audio source signal, and also the root-mean-square value of the reverberation signal is larger than twofold the root-mean-square value of the audio source signal.